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Reply to the Office Action dated June 8, 2010

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REMARKS/ARGUMENTS

Claims 1, 2, 5, and 9-12 are pending in this application. In this Amendment, Applicant AMENDS claims 1 and 10.

Applicant's counsel greatly appreciates the courtesies extended by the Examiner in the telephonic interview of August 31, 2010. Applicant's counsel and the Examiner discussed the amendments to claims 1 and 10 included in this Amendment. The Examiner agreed that these amendments to claims 1 and 10 overcome the outstanding prior art rejection of these claims.

On page 2 of the outstanding Office Action, the Examiner rejected claims 1, 2, 5, and 9-12 under 35 U.S.C. § 103(a) as being unpatentable over Kanekiyo et al. (US 6,706,124).

Applicant respectfully traverses the rejection of claims 1, 2, 5, and 9-12.

Applicant's claim 1 recites:

An iron-based rare-earth nanocomposite magnet having a composition represented by the formula: $T_{100-x-y-z-n}Q_xR_yTi_zM_n$, where T is either Fe alone or Fe in combination with at least one element selected from the group consisting of Co and Ni; Q is at least one element selected from the group consisting of B and C; R is at least one rare-earth element including substantially no La or Ce; and M is at least one metal element selected from the group consisting of Al, Si, V, Cr, Mn, Cu, Zn, Ga, Zr, Nb, Mo, Ag, Hf, Ta, W, Pt, Au and Pb, the mole fractions x, y, z and n satisfying the inequalities of

5 at% ≤ x ≤ 8 at%,

7 at% ≤ y ≤ 10 at%,

0.1 at% ≤ z ≤ 5 at% and

0 at% ≤ n ≤ 10 at%, respectively,

wherein the magnet includes $R_2T_{14}Q$ compound phases and α -Fe phases that form a magnetically coupled nanocomposite magnet structure, and

wherein the $R_2T_{14}Q$ compound phases have an average crystal grain size of 20 nm or more and the α -Fe phases are present at grain boundary triple points in a grain boundary region between the $R_2T_{14}Q$ compound phases, the grain boundary region having a thickness of 20 nm or less,

wherein a ratio of the average crystal grain size of the $R_2T_{14}Q$ compound phases relative to that of the α -Fe phases is 2.0 or more, and

wherein the magnet has magnetic properties including a coercivity of at least 400 kA/m and a remanence of at least 0.9 T. (emphasis added)

Applicant's claim 10 recites features that are similar to the above emphasized features recited in Applicant's claim 1.

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In Section No. 3 on pages 2-6 of the outstanding Office Action, the Examiner alleged that Kanekiyo et al. teaches overlapping alloy proportions, except for the content of Q. The Examiner alleged that the Q content of Kanekiyo et al. closely approximates Applicant's claimed Q content because Kanekiyo et al. teaches that the Q content ("x") is " $x > 10 \text{ at\%}$ " and Applicant's claims 1 and 10 recite that the Q content is " $x \leq 10 \text{ at\%}$ ".

Applicant has amended claim 1 to recite the feature that the Q content is " $5 \text{ at\%} \leq x \leq 8 \text{ at\%}$ ". Support for this feature is found, for example, in paragraph no. [0071] of Applicant's substitute specification.

As noted above, the Examiner has admitted that Kanekiyo et al. fails to teach or suggest this feature.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Kanekiyo et al.

Applicant respectfully requests entry of this Amendment After Final Rejection because this application is in condition for allowance because the application is in condition and because no further search is required by the Examiner. See MPEP § 714.13.

Accordingly, Applicant respectfully submits that the prior art of record, applied alone or in combination, fails to teach or suggest the unique combination and arrangement of elements recited in claims 1 and 10 of the present application. Claims 2, 5, 9, 11, and 12 depend upon claims 1 and 10 and are therefore allowable for at least the reasons that claims 1 and 10 are allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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